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ABSTRACT

Focusing on lawyers, city managers, and social science occupations, this document is one in a series of forty-one reprints from the Occupational Outlook Handbook providing current information and employment projections for individual occupations and industries through 1985. The specific occupations covered in this document include city managers, lawyers, anthropologists, economists, geographers, historians, political scientists, psychologists, and sociologists. The following information is presented for each occupation or occupational area: a code number referenced to the Dictionary of Occupational Titles; a description of the nature of the work; places of employment; training, other qualifications, and advancement; employment outlook; earnings and working conditions; and sources of additional information. In addition to the forty-one reprints covering individual occupations or occupational areas (CE 017 757-797), a companion document (CE 017 756) presents employment projections for the total labor market and discusses the relationship between job prospects and education. (BM)

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Lawyers, City Managers, and Social Science Occupations

CE

Reprinted from the
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U.S. Department of Labor
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Containing the midpoints of the legs of right triangle *RST*, wher pt. (−5, 5), *S* is pt. (1, 1), and *T* is pt. (3, 4).

Containing the longer diagonal of a quadrilateral whose vertic pts. (2, 2), (−2, −2), (1, −1), and (6, 4).

Show that the equations $y - 1 = \frac{1}{2}(x + 3)$ and $y - 4 = \frac{1}{2}(x$ are equivalent.

An equation of the line containing pts. (−2, 3) and (4, −1) c written in the form $y - 3 = -\frac{1}{2}(x + 2)$ or in the $y + 1 = -\frac{1}{2}(x - 4)$, depending upon which point you take (x_1, y_1). Show that the two equations are equivalent.

Show that the equations are equivalent.

$$y - y_1 = \frac{y_2 - y_1}{x_2 - x_1}(x - x_1) \qquad y - y_2 = \frac{y_1 - y_2}{x_1 - x_2}(x - x$$

State the equation of a line through pt. (p, q) and parallel to containing pts. (a, b) and (c, d). $(a \neq c)$.

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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CE 017 784

CITY MANAGERS

(D.O.T. 188.118 and 188.168)

Nature of the Work

Population growth and industrial expansion place increasing pressure on housing, transportation, and other facilities of cities. Problems associated with growing modern communities, such as air and water pollution and rising crime rates, also demand attention. To cope effectively with these problems, many communities hire a specialist in management techniques—the city manager.

A city manager usually is appointed by the community's elected officials and is responsible directly to them. Although duties vary by city size, city managers generally administer and coordinate the day-to-day operations of the city. They are responsible for functions such as tax collection and disbursement, law enforcement, and public works. They also hire department heads and their staffs and prepare the annual budget to be approved by elected officials. In addition, they study current problems, such as traffic congestion, crime, or urban renewal, and report their findings to the elected council.

City managers must plan for future growth and development of cities and surrounding areas. To provide for an expansion of public services, they frequently appear at civic meetings to advocate certain programs or to inform citizens of current government operations.

City managers work closely with planning departments to coordinate new and existing programs. In smaller cities that have no permanent planning staff, coordination may be done entirely by the manager.

To aid the city manager, many cities employ *management assistants*: assistant city managers, department head assistants, and administrative assistants. Under the manager's direction, management assistants administer programs, prepare reports, receive visitors, answer correspondence, generally help to keep the city government functioning smoothly. Assistant city managers organize and coordinate city programs, supervise city employees, and act for the city manager upon occasion. They also may assume responsibility for some projects, such as the development of a preliminary annual budget. Department head assistants generally are responsible for one activity, such as personnel, finance, or law enforcement, but they also may assist in other areas. Administrative assistants, also called executive assistants or assistants to the city manager, usually do administrative and staff work in all departments under the city manager. For instance, they may compile operating statistics or review and analyze work procedures.

A city manager often deals with members of the community.

Places of Employment

About 3,000 city managers were employed in 1976. In addition, nearly 9,000 persons worked as administrative assistants, department head assistants, and assistant city managers. Most city managers worked for cities and counties that had a council-manager form of government. Under this type of government, an elected council appoints a manager who is responsible for the day-to-day operation of the government as well as for the hiring and firing of assistants, department heads, and other staff. Many other city managers worked for municipalities that had the mayor-council form of government, in which the mayor appoints the city manager as his or her chief administrative officer. A few city managers also worked for county governments, metropolitan or regional planning organizations, and councils of governments. All types of local governments employed management assistants, but larger jurisdictions generally employed them in greater numbers.

Although over three-quarters of all city managers work for small cities having less than 25,000 inhabitants, many larger cities also employ a city manager. About half of the cities having a population of between 10,000 and 500,000 have city managers. City managers work in all States, but one-half are concentrated in the eastern part of the Nation.

Training, Other Qualifications, and Advancement

A master's degree, preferably in public or business administration, is becoming essential for those seeking a career in city management. Although some applicants with only a bachelor's degree may find employment, strong competition for positions, even among master's degree recipients, will make the graduate degree a requirement for most entry level jobs. In some cases, employers may hire a person with training in a field related to public administration, such as engineering, recreation, social work, or political science.

In 1976, 185 colleges and universities offered graduate degree programs in public or municipal administration. Degree requirements in some schools include successful completion of an internship program in a city manager's office. During this internship period, which may last from 6 months to a year, the degree candidate observes local government operations and does research under the direct supervision of the city manager.

Nearly all city managers begin as management assistants. Most new graduates work as administrative assistants to city managers for several years to gain experience in solving urban problems, coordinating public services, and applying management techniques. Others work in a government department such as finance, public works, or public planning. They may acquire supervisory skills and additional experience by working as assistant city manager or department head assistant. City managers often are first employed in small cities, but during their careers they may work in several cities of increasing size.

Persons who plan a career in city management should like to work with detail and to be a part of a team. They must have sound judgment, self-confidence, and the ability to perform well under stress. To handle emergency situations, city managers must quickly isolate problems, identify their causes, and provide a number of possible solutions. City managers should be tactful and able to communicate and work well with people.

City managers also must be dedicated to public service since they often put in long, hard hours in times of crisis.

Employment Outlook

Employment of city managers and local government management assistants is expected to expand faster than the average for all occupations through the mid-1980's as management of our governments becomes more complex. Examples of more sophisticated management techniques include computerized tax and utility billing, electronic traffic control, and application of systems analysis to urban problems. The demand for city managers also will increase as more cities convert to the council-manager form of government, currently the fastest growing form of city government. Furthermore, city managers and management assistants will be employed by other types of local government to help elected officials with day-to-day operations of government. Increased emphasis on regional solutions to urban problems should result in additional job opportunities for city managers and management assistants in councils of government.

Persons who seek beginning management assistant jobs may face strong competition through the mid-1980's, especially if they do not have a graduate degree in public administration or related management experience. Competition should be keen among the growing number of administrative assistants, department head assistants, and assistant city managers for the relatively few city manager positions. However, many of those unable to find employment in this area should find jobs in other fields of public administration.

Earnings and Working Conditions

Salaries of city managers and management assistants vary according to education, experience, job responsibility, and city size. Generally, city managers' earnings are very high relative to the average earnings for nonsupervisory workers in private industry, except farming. In 1976, average annual salaries of city managers ranged from about $20,000 in cities of 5,000 inhabitants to more than $40,000 in cities of over 100,000 inhabitants, according to the International City Management Association. The average annual salary for all city managers was more than $23,000. City managers in cities not having council-manager governments received slightly less.

Salaries of management assistants averaged $17,000 in 1976, and ranged from about $12,000 in small cities to more than $20,000 in large ones. Salaries of assistant city managers generally were higher than those of other management assistants.

City managers often work more than 40 hours a week. Emergency problems may require evening and weekend work and meetings with individuals and citizen's groups consume additional time.

Fringe benefits usually include health and life insurance programs, pension plans, sick leave, vacation time, and often a car for official business. Managers generally are reimbursed for expenses incurred while attending professional meetings and seminars.

Sources of Additional Information

For information on a career in city management, contact:

International City Management Association, 1140 Connecticut Ave. NW., Washington, D.C. 20036.

LAWYERS

(D.O.T. 110.108, .118, and 119.168)

Laws permeate every aspect of our society. They regulate the entire spectrum of relationships among individuals, groups, businesses, and governments. They define rights as well as restrictions, covering such diverse human activities as judging and punishing criminals, granting patents, drawing up business contracts, paying taxes, settling labor disputes, constructing buildings, and administering wills.

Because social needs and attitudes are continually changing, the legal system that regulates our social, political, and economic relationships also is subject to change. The task of keeping the law responsive to human needs is the work of lawyers. Also called attorneys, lawyers are the link between the legal system and society. To perform this role, they must understand the world around them and be sensitive to the numerous aspects of society that are touched by the law. They must comprehend not only the words of a particular statute, but the human circumstances it addresses as well.

As our body of laws grows more voluminous and complex, as the legal system takes on new regulatory tasks in social welfare, racial integration, energy conservation, and other areas, the work of lawyers takes on wider significance.

Nature of the Work

Lawyers perform a wide variety of tasks, but certain basic activities are common to nearly every attorney's work. Probably the most fundamental of all is interpretation of the law. Every attorney, whether representing the defendant in a murder trial or the plaintiff (suing party) in a lawsuit, combines an understanding of the relevant laws with knowledge of the facts in the particular case in order to determine how the first affects the second. Based on this determination, the attorney decides what courses of action would best serve the interests of the party he or she represents.

In order to interpret the law knowledgeably, lawyers do research. They must stay abreast of their field, in both legal and nonlegal matters. An attorney representing electronics manufacturers, for example, must follow trade journals as well as the latest Federal regulations affecting his or her clients. Attorneys in the State Department must remain well-versed in current events and international law, while divorce lawyers spend a certain portion of their time reading about the changing role of the family in modern society. Research also includes specific, in-depth reading on the legal questions or substantive matters of an individual case. In any event, the overwhelming volume of literature to be digested requires a lawyer to conduct research efficiently, quickly picking out and evaluating the substance of a particular article or court case.

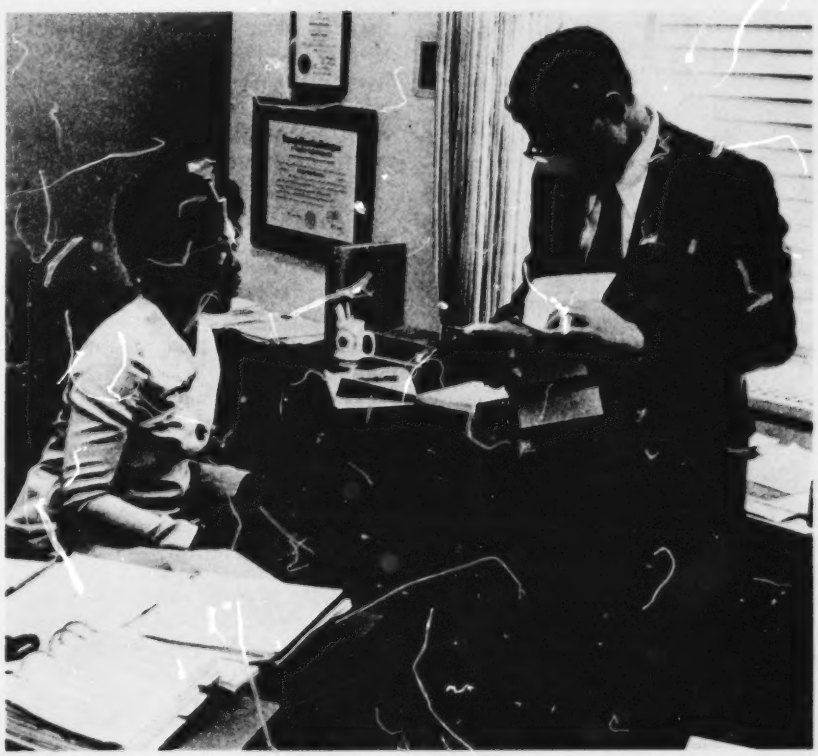
Usually a lawyer's work also involves contact with people. Attorneys consult with their clients to determine the details of their specific problems, advise them of the law, and suggest actions that might or must be taken. To be effective, a lawyer learns to deal with people in a courteous, efficient fashion.

Finally, most lawyers must do some writing in the course of their work. This may take the form of reports, legal briefs, or administrative paperwork. In all cases, the attorney calls upon his or her ability to communicate clearly and precisely.

The more detailed aspects of the legal profession depend upon the lawyer's individual field and position. Most lawyers are engaged in general practice and handle all kinds of legal work for clients. They counsel the individual who wants to buy property, make a will, sign a contract, or settle an estate. These lawyers perform whatever tasks are necessary to help their client comply with the law.

A significant number specialize in one branch of law, such as corporate, criminal, labor, patent, real estate, tax, or international law. Communications lawyers, for example, may represent radio and television stations in their dealings with the Federal Communications Commission (FCC). They help established stations prepare and file license renewal applications, employment reports, and other documents required by the FCC on a regular basis. They also keep their clients informed of changes in FCC regulations. Communications lawyers give similar assistance to individuals or corporations wishing to buy or sell a station or establish a new one.

Other lawyers specialize in representing public utilities before the Federal Power Commission (FPC) and other regulatory agencies. For example, they handle matters involving the reasonableness of utility rates. They help a firm develop its case, assist in preparing strategy, ar-



Corporate lawyers reviewing legal matters pertaining to the company.

guments, and testimony, prepare the case for presentation at a trial or administrative hearing, and argue the case. These lawyers also keep clients informed about changes in regulations and advise them as to the legality of their actions.

Private practitioners specialize in other areas, too. Some draw up wills, trusts, contracts, mortgages, and other legal documents; conduct out-of-court negotiations; and do investigative and other legal work to prepare for trials. Some may act as trustees by managing a person's property and funds, or as executors by seeing that the provisions of their client's will are carried out. A small number of lawyers devote themselves entirely to courtroom work. An increasing number handle only so-called public interest cases. These cases, either civil or criminal, have a potential impact extending well beyond the individual client. Attorneys who take these cases hope to use them as a vehicle for legal and social reform.

Some lawyers are employed full time by a single client. Known as house counsel, these lawyers usually work for a corporate firm, advising and acting on legal questions that arise from the company's business activities. These questions may involve patents for new productions, FTC regulations, a business contract with another company, or a collective bargaining agreement with a union.

Attorneys employed at the various levels of government constitute still another category. Criminal lawyers may work in the office of a State attorney general; they also may be employed by a prosecutor's or public defender's office, or by the court itself. At the Federal level, attorneys perform investigations for the Justice Department and regulatory agencies. Lawyers at every level of government also help develop laws and programs; they prepare drafts of proposed legislation, establish law enforcement procedures, and argue cases.

Many people who have legal training do not work as lawyers but use their knowledge of law in other occupations. They may, for example, be journalists, management consultants, financial analysts, insurance claim adjusters, tax collectors probation officers, and credit investigators. A legal background also is an asset to those seeking or holding public office.

Places of Employment

About 396,000 persons worked as lawyers in 1976. Almost three-fourths of them, 280,000, practiced privately, with about 40 percent in solo practice and the other 60 percent working in law firms. Of the remaining 116,000, about one-third were employed as house counsel by various business firms; one-fourth worked in the Federal Government; the remainder held positions in State and local government. In addition, about 8,000 lawyers taught full or part time in law schools. Some salaried lawyers also have independent practices; others do legal work part time while in another occupation.

Training, Other Qualifications, and Advancement

In order to practice law in the courts of any State, a person must be admitted to its bar. Applicants for admission to the bar must pass a written examination; however, a few States drop this requirement for graduates of their own law schools. Lawyers who have been admitted to the bar in one State occasionally may be admitted in another without taking an examination provided they meet that State's standards of good moral character and have a specified period of legal experience. Each Federal court or agency sets its own qualifications for those practicing before it.

To qualify for the bar examination in most States, an applicant must have completed 3 years of college and have graduated from a law school approved by the American Bar Association (ABA) or the proper State authorities. (ABA approval signifies that the law school meets the minimum standards necessary to allow its graduates to take the bar exam and practice law in any State. Graduates of nonapproved schools are restricted to the State in which the school is located.) A few States accept the study of law wholly in a law office or in combination with study in a law school; only California accepts the study of law by correspondence as qualification for taking the bar exam. Several States require registration and approval of students by the State Board of Examiners, either before they enter law school or during the early years of legal study. In a few States, candidates must complete clerkships before they are admitted to the bar.

Although there is no nationwide bar exam, most States and the District of Columbia participate in the Multistate Bar Examination (MBE). The MBE, covering issues of broad interest, is given in addition to the State bar exam; how the MBE score is treated varies from State to State.

The required college and law school education usually takes 7 years of full-time study after high school—4 years of undergraduate study followed by 3 years in law school. Although a number of law schools accept students after 3 years of college, an increasing number require applicants to have a bachelor's degree. To meet the needs of students who can attend only part time, a number of law schools have night or part-time divisions which usually require 4 years of study. In 1976, about one-fifth of all graduates of ABA-approved schools were part-time students.

Competition for admission to law school has become intense in the last few years. Enrollments rose very rapidly between 1969 and 1972, and, according to one estimate, applications outnumbered available openings by almost 10 to 1 in the mid-1970's. Although the increase in enrollments is expected to slow by the 1980's, law school admission will remain the first of several hurdles for prospective lawyers.

Preparation for a career as a lawyer really begins in college. Although there is no such thing as a "prelaw major," the undergraduate program almost always makes a difference. Certain courses and activities are desirable because they give the student the skills needed to succeed both in law school and in the profession. Essential skills—the ability to write, to read and analyse, to think conceptually and logically, and to communicate verbally—are learned during

high school and college. The best undergraduate program is one that cultivates these skills while at the same time broadening the student's view of the world. Majors in the social sciences, natural sciences, and humanities all fill the bill, as long as the student does not specialize too narrowly.

Students interested in a particular aspect of the law may find it helpful to take related courses; for example, engineering and science courses for the prospective patent attorney, and accounting for the future tax lawyer. In addition, typing is advisable simply for convenience in law school.

Acceptance by most law schools depends on the applicant's ability to demonstrate an aptitude for the study of law, usually through good grades and the Law School Admission Test (LSAT), administered by the Educational Testing Service. In 1976, 163 law schools had American Bar Association approval. Others—chiefly night schools—were approved by State authorities only.

The first year or year and a half of law school generally is devoted to fundamental courses such as constitutional law, contracts, property law, and judicial procedure. In the remaining time, students may elect specialized courses in fields such as tax, labor, or corporation law. Practical experience often is acquired by participation in school-sponsored legal aid activities, in the school's practice court where students conduct trials under the supervision of experienced lawyers, and through writing on legal issues for the school's law journal. Graduates receive the degree of *juris doctor* (J.D.) from most schools as the first professional degree. Advanced study often is desirable for those planning to specialize, do research, or teach in law schools.

The practice of law involves a great deal of responsibility. Persons planning careers in law should like to work with people and ideas, and be able to win the confidence of their clients.

Most beginning lawyers start in salaried positions, although some go into independent practice immediately after passing the bar examination. Newly hired salaried attorneys usually act as research assistants (law clerks) to experienced lawyers or judges. After several years of progressively responsible salaried employment, many lawyers go into practice for themselves. Some lawyers, after years of practice, become judges.

Employment Outlook

A rapid increase in the number of law school graduates has created keen competition for the available jobs. In the years ahead, the number of graduates is expected to increase further and intensify this competition.

Employers will be selective in hiring new lawyers. Graduates of well-known law schools and those who rank high in their classes should find salaried positions with law firms, on the legal staffs of corporations and government agencies, and as law clerks for judges. Graduates of less prominent schools and those with lower scholastic ratings will experience some difficulty in finding salaried jobs. However, many will find opportunities in fields where legal training is an asset but not normally a requirement.

The employment of lawyers is expected to grow faster than the average for other occupations through the mid-1980's as increased business activity and population create a demand for attorneys to deal with a growing number of legal questions. Supreme Court decisions extending the right to counsel for persons accused of lesser crimes, the growth of legal action in the areas of consumer protection, the environment, and safety, and an expected increase in the use of legal services by middle-income groups through prepaid legal service programs also should provide employment opportunities. Other jobs will be created by the need to replace lawyers who die, retire, or leave the occupation for other reasons.

Prospects for establishing a new practice probably will continue to be best in small towns and expanding suburban areas, as long as there already exists an active market for legal services in which the new lawyer can find clients. In such communities competition is likely to be less than in big cities and new lawyers may find it easier to become known to potential clients; also, rent and other business costs are somewhat lower. Nevertheless, starting a new practice will remain an expensive and risky proposition that should be weighed carefully. Salaried positions will be limited largely to urban areas where the chief employers of legal talent—government agencies, law firms, and big corporations—are concentrated.

Earnings and Working Conditions

Lawyers entering practice in 1976 earned a wide range of starting salaries—from about $10,000 to $23,000 a year. Most fell in the $15,000 to $18,000 range. Factors affecting the salaries offered to new graduates include: their academic records; type, size, and location of their employers; and whether the new lawyer has any specialized educational background that the employer requires. The field of law makes a difference, too. Patent lawyers, for example, tend to earn more than general corporate attorneys. Lawyers with at least a year's experience working in manufacturing and business firms earned about $18,000 a year; those with a few years of experience earned $30,000 or more annually. In the Federal Government, annual starting salaries for attorneys in 1977 were $14,097 or $17,056, depending upon academic and personal qualifications. Federal attorneys with some experience earned $24,308 or more a year.

Beginning lawyers engaged in legal-aid work usually receive the lowest starting salaries. New lawyers starting their own practices may earn little more than expenses during the first few years and may need to work part time in other occupations.

Lawyers on salary receive increases as they assume greater responsibility. Incomes of lawyers in private practice usually grow as their practices develop. Private practitioners who are partners in law firms generally earn more than those who practice alone.

Lawyers often work long hours and are under considerable pressure when a case is being tried. In addi-

tion, they must keep abreast of the latest laws and court decisions. However, since lawyers in private practice can determine their own hours and workload, many stay in practice well past the usual retirement age.

Sources of Additional Information

Persons considering law as a career will find information on law schools and prelaw study in the *Prelaw Handbook*, published annually (Princeton, N.J.: Educational Testing Service). Copies may be available in public or school libraries. In addition, many colleges and universities have a prelaw advisor who counsels undergraduates about their undergraduate course work, the LSAT, law school applications, and other matters.

Information on law schools and law as a career is available from:

Information Services, The American Bar Association, 1155 East 60th St., Chicago, Ill. 60637. (There may be a slight charge for publications.)

Information on law school accreditation is available from:

Association of American Law Schools, Suite 370, 1 Dupont Circle NW., Washington, D.C. 20036.

For advice on financial aid, contact a law school financial aid officer.

The specific requirements for admission to the bar in a particular State may be obtained at the State capital from the clerk of the Supreme Court or the secretary of the Board of Bar Examiners.

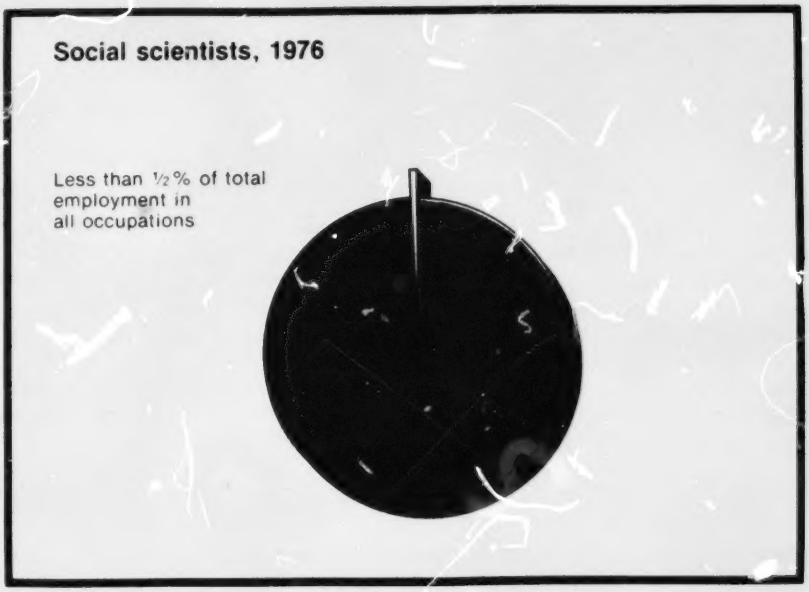
SOCIAL SCIENTISTS

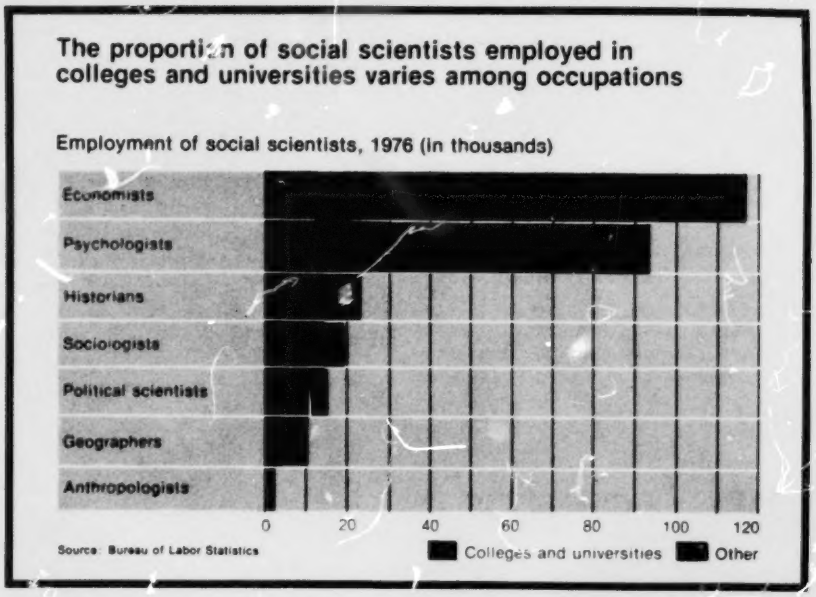
Social scientists study all aspects of human society—from the origins of man to the latest election returns. Regardless of their field of specialization, they are concerned with some aspect of society, culture, or personality. Anthropologists study primitive tribes and modern communities, reconstruct civilizations of the past, and analyze the physical characteristics, cultures, and languages of all people, past and present. Economists study the allocation of land, labor, and capital, and the production, distribution, and consumption of goods and services. Geographers study the relationship between geographic factors and economics, politics, urban problems, culture, health problems, and other areas. They also seek to explain changing patterns of human settlement. Historians describe and interpret the people, ideas, institutions, and events of the past and present. Political scientists study the theories, objectives, and organization of all types of government. Psychologists study the behavior of humans and lower animals in order to understand and explain their actions, and assist in adjustment or rehabilitation when necessary. Sociologists analyze the behavior and relationships of groups—such as the family, the community, and minorities—to the individual or to society as a whole. Besides these basic social science occupations, a number of closely related fields are covered in separate statements elsewhere in this *Handbook*. (See statements on statisticians, social workers, and other social service occupations.)

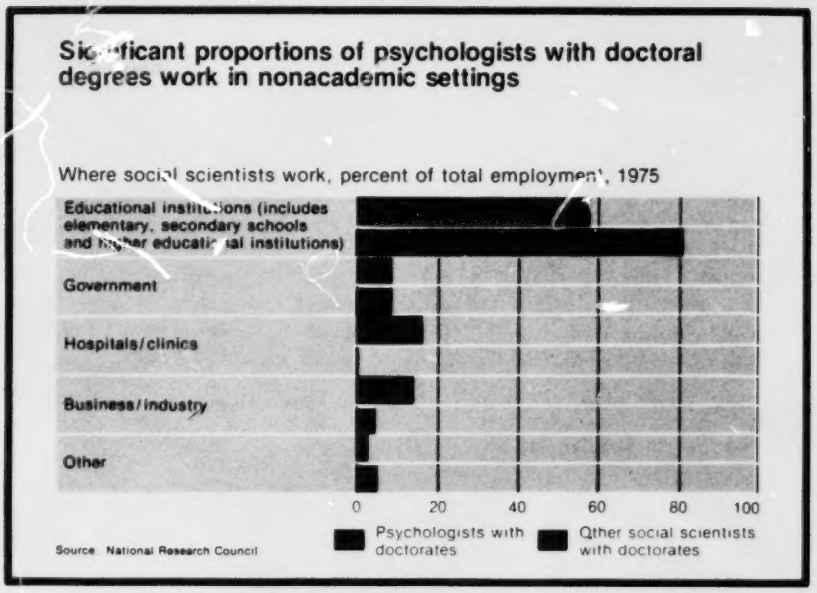
The basic social science occupations provided employment for about 230,000 persons in 1976. Overlapping among the basic social science fields makes it difficult to determine the exact size of each profession. Economists, however, make up the largest social science group and anthropologists the smallest.

About one-third of all social scientists work in colleges and universities. However, the two largest social science occupations, economists and psychologists, are not as heavily concentrated in institutions of higher education as other social scientists. (See chart.)

Federal, State, and local government agencies, research and consulting firms, hospitals and other health facilities, and unions, associations, and nonprofit organizations also employ social scientists. Business firms of all kinds are important employers of social scientists. Banks, insurance







companies, retailers, and manufacturing concerns all employ social science majors as trainees for sales, research, administrative, and executive positions.

Overall employment in the social sciences is expected to grow about as fast as the average for all occupations through the mid-1980's. Economists, psychologists, and geographers are expected to experience faster than average growth; anthropologists will grow about as fast as average; and political scientists, sociologists, and historians will grow more slowly than average. Colleges and universities, the traditional employers of many highly qualified social scientists, are not expected to offer as many job opportunities through 1985 as they did in the past, because of the slowing of enrollment growth. Top graduates of prestigious universities should have an advantage for the limited number of academic positions. Most employment growth should occur in nonacademic areas, and many highly qualified social scientists are expected to seek such positions. Despite this anticipated growth, the number of persons seeking to enter the social science field is likely to exceed the available job openings. The following statements present more detailed information about the prospective outlook in the individual occupations.

ANTHROPOLOGISTS

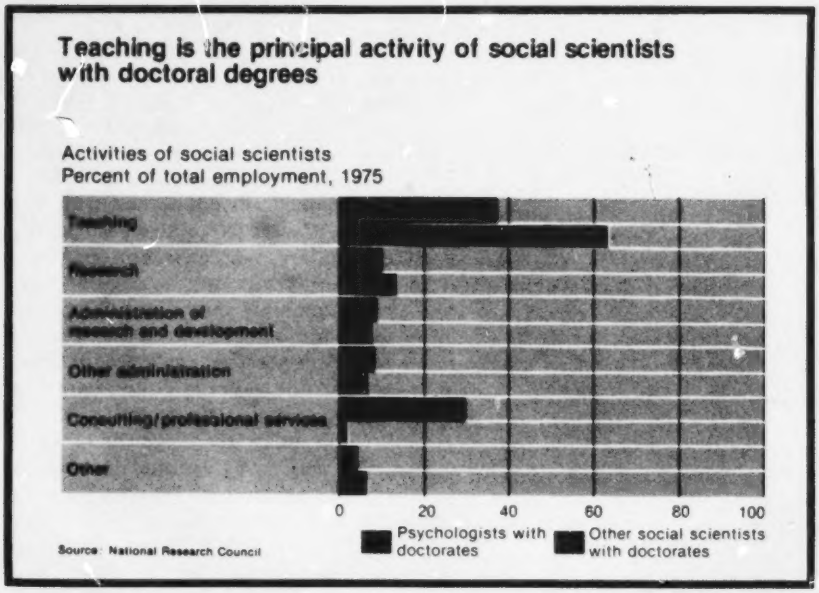
(D.O.T. 055.088)

Nature of the Work

Anthropologists study man—his origins, physical characteristics, and culture. These areas of study examine people's traditions, beliefs, customs, languages, material possessions, social relationships, and value systems. Although anthropologists generally specialize in one of four specific areas—cultural anthropology, archeology, linguistics, and physical anthropology—they are expected to have a general knowledge of all of them.

Most anthropologists specialize in cultural anthropology, sometimes called ethnology. *Ethnologists* may spend long periods living with tribal groups or in modern communities to learn about their ways of life. The cultural anthropologist lives with a group of people to observe and write about their social customs, beliefs, and material possessions. They usually learn the native language in the process. They also make comparative studies of the cultures and societies of various groups. In recent years, investigations have included fewer primitive societies and more complex urban societies, including ghetto inhabitants, drug addicts, and the aged.

Archeologists study cultures which no longer exist or have changed greatly. They study the remains of homes, tools, clothing, ornaments, and other evidences of human life and activity to reconstruct the inhabitants' history and customs. For example, in a desert in New Mexico, archeologists uncovered an ancient kiva— an Indian religious chamber. In a cave by the Dead Sea, some have



found pieces of ancient scrolls 2,000 years old. Archeological teams also have excavated three large prehistoric communities along the Illinois River.

Linguistic anthropologists study the evolution of language and the place of language in a culture. They examine the sounds and structure of a society's language and relate them to the behavior and thought patterns of members of that society. Such studies may be used to trace the diffusion of a language or people over wide geographical areas.

Physical anthropologists studying human evolution investigate how the physical characteristics of different races or groups of people are influenced by heredity and environment. This work requires extensive training in human anatomy, biology, genetics, and the study of primates (the order of mammals that includes man, apes, and monkeys). A physical anthropologist may identify a fossil of a human ancestor or teach a chimpanzee to communicate with sign language. A knowledge of body structure enables physical anthropologists to work as consultants on projects such as the design of cockpits for airplanes and spaceships, and the sizing of clothing.

Most new employment opportunities are expected to be in *applied anthropology*, a specialty which uses the findings of anthropology in a practical manner. Applied cultural anthropologists may, for example, provide technical guidelines to ease the transition of nonindustrial societies to a more complex level of socioeconomic organization, or a medical anthropologist studying cultural attitudes towards health and medical treatment may help formulate and administer a health program for an ethnic minority. Many medical schools hire medical anthropologists as instructors.

Applied linguistic anthropologists may create a written alphabet to help advance literacy in societies with unwritten languages. Another related specialty area is *urban anthropology*, the study of urban life, urbanization, rural-urban migration, and the influence of city life.

Most anthropologists teach in colleges and universities, and they often combine teaching with research. Some specialize in museum work, which generally combines administrative duties with fieldwork and research on anthropological collections. Anthropologists also write cultural, social, and archeological impact statements for proposed Government projects. Some work in business and industry including construction firms or engage in nontechnical writing.

Places of Employment

About 3,500 persons worked as anthropologists in 1976. About four-fifths of all anthropologists work in colleges and universities. The Federal Government employs a small but growing number, chiefly in museums, national parks, the Bureau of Indian Affairs, the Army Corps of Engineers, and technical aid programs. State and local government agencies employ anthropologists, usually for museum work or health research. Some work as consultants in private, community, or overseas development organizations.

Training, Other Qualifications, and Advancement

Students who want to become anthropologists should obtain the Ph. D. degree. College graduates with bachelor's degrees often get temporary positions and assistantships in graduate departments where they are working for advanced degrees. A master's degree, plus field experience, is sufficient for many beginning professional positions, but promotion to top positions generally is reserved for individuals who have a Ph. D. degree. Many colleges and universities require a Ph. D. degree for permanent teaching appointments. Persons with a master's or bachelor's degree in anthropology may be hired as government social science analysts or placed in managerial positions by private employers.

A student interested in studying anthropology should have a strong background in the social and physical sciences. Mathematics is helpful, since statistical and computer methods are becoming more widely used for research in this field. Undergraduates may begin their field training in archeology by arranging, through their university departments, to accompany expeditions as laborers or to attend field schools established for training. They may later become supervisors in charge of the digging or collection of material and finally may direct a portion of the work of the expedition. Ethnologists and linguists usually do their fieldwork independently. Most anthropologists base their doctoral dissertations on data collected through field research;

they are, therefore, experienced fieldworkers by the time they earn the Ph. D. degree.

Nearly 300 colleges and universities have bachelor's degree programs in anthropology; some 130 offer master's degree programs and about 80, doctoral programs. The choice of a graduate school is very important. Students interested in museum work should select a school which is associated with a museum that has anthropological collections. Similarly, those interested in archeology should choose either a university that offers opportunities for summer experience in archeological fieldwork, or attend an archeological field school elsewhere during summer vacations.

Anthropologists should have special interest in natural history and social studies and enjoy reading, research, and writing. Traveling to remote areas, working in an uncomfortable climate, and living in primitive housing are sometimes necessary.

Anthropologists work with ideas and have the opportunity for self-expression. They should be able to work independently and with detail.

(For information on advancement, see the *Handbook* statement on College and University Teachers.)

Employment Outlook

Employment of anthropologists is expected to increase about as fast as the average for all occupations. Most new jobs are expected to be in private industry, the Federal Government, mental and public health agencies, and urban planning departments of city governments. College and university teaching, which will remain the largest area of employment for anthropologists, is likely to have little growth due to the projected slowdown in college enrollments.

The number of qualified anthropologists seeking to enter the field will likely exceed available positions. As a result, doctorate holders may face keen competition through the mid-1980's, particularly for jobs in colleges and universities. Graduates with only bachelor's and master's degrees are expected to face very keen competition, although they may be preferred for some nonacademic positions. Some teaching positions may be available in junior colleges or high schools for those who meet state certification requirements.

Earnings and Working Conditions

Starting salaries for anthropologists with a Ph. D. degree were generally about $16,000 a year in 1976. Most experienced anthropologists earned between $17,000 and $27,000 a year, according to limited data available. In general, salaries of experienced anthropologists are a little less than the average for all social science professional workers.

In the Federal Government, anthropologists having a bachelor's degree could begin as trainees at $9,303 or $11,523 a year in 1977, depending upon the applicant's academic record. The starting salary for those having a master's degree was $14,097 a year, for those having a Ph. D., $17,056. Anthropologists in the Federal Government averaged around $23,800 in 1977.

Many anthropologists in colleges and universities supplement their regular salaries with earnings from other sources such as summer teaching and research grants.

Anthropologists sometimes are required to do fieldwork under adverse weather conditions. They also must adapt themselves to cultural environments which are materially and socially different.

Sources of Additional Information

For information about employment opportunities and schools that offer graduate training in anthropology, contact:

The American Anthropological Association, 1703 New Hampshire Ave. NW., Washington, D.C. 20009.

The Archeological Institute of America, 260 W. Broadway, New York, N.Y. 10013.

ECONOMISTS

(D.O.T. 050.088 and .118)

Nature of the Work

Economists are concerned with how to utilize scarce resources such as land, raw materials, and human resources to provide goods and services for society. Economists analyze the relationship between the supply and demand of goods and services and study how they are produced, distributed, and consumed. Some economists are concerned with specific fields such as farm, wage, tax, and tariff problems and policies, while others attempt to develop theories explaining the causes of employment and unemployment or inflation. Most economists analyze and interpret a wide variety of economic data in the course of their work.

Economists in colleges and universities are engaged primarily in teaching the theories, principles, and methods of economics. In addition, economics faculty members often are involved in research, writing, and other nonteaching activities. They frequently act as consultants to business firms, government agencies, or individuals.

Economists in government collect and analyze data and prepare studies used to assess economic conditions and the need for changes in government policy. Most government economists are in the fields of agriculture, forestry, business, finance, labor, transportation, or international trade and development. For example, economists in the U.S. Department of Commerce study domestic production, distribution, and consumption of commodities or services; in the Federal Trade Commission, economists prepare economic evidence or industry analyses to assist in enforcing Federal statutes designed to eliminate unfair, deceptive, or monopolistic practices in interstate commerce; economists in the Bureau of Labor Statistics assist in survey planning and analyze data on prices, wages, employment, and productivity.

Economists who work for business firms provide management with information to make decisions on marketing and pricing of company products; analyze the effect of government policies on business or international trade; or look at the advisability of adding new lines of merchandise, opening new branch operations, or otherwise expanding the company's business. Business econo-

Economics is the largest social science field.

mists working for firms that carry on extensive operations abroad may be asked to prepare short- and long-term forecasts of foreign economies as well as forecasts of the U.S. economy.

Places of Employment

Economics is the largest social science field. About 115,000 persons worked as economists in 1976, excluding those teaching in secondary schools. About 3 out of 4 of these jobs are in private industry or research organizations. Important employers of economists include manufacturing firms, banks, insurance companies, securities and investment companies, and management consulting firms. Colleges and universities employ about 10 percent of the Nation's economists while government agencies, primarily Federal, employ another 10 percent. Some economists run their own consulting businesses.

Economists work in all large cities and university towns. The largest number are in the New York City and the Washington, D.C. metropolitan areas. Some work overseas, mainly for the U.S. Department of State including the Agency for International Development.

Training, Other Qualifications, and Advancement

Economists must have a thorough understanding of economic theory and of mathematical methods of economic analysis. Since many beginning jobs for economists in government and business involve the collection and compilation of data, a thorough knowledge of basic statistical procedures is required. In addition to courses in macroeconomics, microeconomics, econometrics, and business and economic statistics, training in computer science is highly recommended.

At the undergraduate level, courses in one or more of the following subjects also are valuable: business cycles; economic and business history; economic development of selected areas; money and banking; international economics; public finance; industrial organization; labor economics; comparative economic systems, economics of national planning; urban economic problems and policies; marketing principles and organization; consumer analysis; organizational behavior; and business law.

A bachelor's degree with a major in economics is sufficient for many beginning research, administrative, management trainee, and business sales jobs. However, graduate training increasingly is required for advancement to more responsible positions as economists. Areas of specialization at the graduate level include advanced economic theory, comparative economic systems and planning, econometrics, economic development, economic history, environmental and natural resource economics, history of economic thought, industrial organization, institutional economics, international economics, labor economics, monetary economics, public finance, regional and urban economics, and social policy. Students should select graduate schools strong in specialties in which they are interested. Some schools help graduate students find part-time employment in nearby government or private organizations engaged in economic research where students may gain valuable experience.

In the Federal Government, candidates for entrance positions must have a minimum of 21 semester hours of economics and 3 hours of statistics, accounting, or calculus.

A master's degree generally is the minimum requirement for a job as a college instructor in many junior colleges and small 4-year schools. In many large colleges and universities, completion of all the requirements for a Ph. D. degree, except the dissertation, is necessary for appointment as a teaching assistant or instructor. The Ph. D. degree usually is required for a professorship and almost always is necessary to gain tenure.

In government, industry, research organizations, and consulting firms, economists who have a graduate degree usually can qualify for more responsible research and administrative positions. Experienced business economists may advance to managerial or executive positions in banks, industrial concerns, trade associations and other organizations where they formulate practical business and administrative policy.

About 1,500 colleges and universities offer bachelor's degree programs in economics; about 230, master's; and about 120, doctoral programs.

Persons who consider careers as economists should be able to work

accurately and in detail since much time is spent on careful analysis of data. Frequently, the ability to work as part of a team is required. Economists must be objective in their work and be able to express themselves effectively both orally and in writing.

Employment Outlook

Employment of economists is expected to grow faster than the average for all occupations through the mid-1980's. However, most openings will result from deaths, retirements, and other separations from the labor force.

Private industry and business will continue to provide the largest number of employment opportunities for economists because of the increasing complexity of the domestic and international economies and the increased reliance on quantitative methods of analyzing business trends, forecasting sales, and planning purchases and production operations. Employers will seek those well-trained in econometrics and statistics. In addition, the increasing need for business economists to assist lawyers, accountants, engineers, and other professionals in solving problems should stimulate employment growth. Employment of economists in State and local government agencies is expected to increase because of the growing responsibilities of local governments in areas such as housing, transportation, environment and natural resources, health, and employment development and training. Employment of economists in the Federal Government is expected to rise slowly—in line with the rate of growth projected for the Federal work force as a whole. Colleges and universities, the traditional employer of many highly qualified economists, are not expected to significantly increase employment. As a result, many such economists may seek nonacademic positions.

Persons who graduate with a bachelor's degree in economics through the mid-1980's are likely to face keen competition for jobs as economists. However, many of these degree holders will find employment in government, industry, and business as management or sales trainees, or as research assistants. Candidates who hold master's degrees in economics face very strong competition for teaching positions in colleges and universities, but they should find good opportunities for administrative, research, and planning positions in private industry and government. Ph. D.'s are likely to face competition for academic positions, although those graduating from high-ranking universities should have an advantage. Ph. D.'s should have favorable opportunities in government, industry, research organizations, and consulting firms.

Economists specializing in the environment, energy and natural resources, health, and transportation are expected to have good job opportunities. However, since practicing economists may shift from one specialty to another, fields of specialization offering favorable job opportunities may change over short periods of time. A strong background in economic theory and econometrics provides the tools for acquiring any specialty within the field.

Earnings

According to the 1975-76 College Placement Council Salary Survey, bachelor's degree candidates in the social sciences received offers averaging around $10,000 a year; master's degree candidates in the social sciences, around $12,000; bachelor's degree candidates offered positions in the field of finance and economics, around $10,600.

According to an American Economic Association survey, average salary offers made to new Ph. D.'s for the academic year 1975-76 were as follows: in colleges and universities, around $13,100 to $14,600 for the 9-month academic year; in business and industry, $18,000 a year; in banking and finance, $17,775 a year; in consulting and research, $17,500 a year; in the Federal Government, $18,750 a year; and in State and local government, $15,500 a year. Average salaries of economists employed in colleges and universities for the academic year 1975-76 were as follows: for professors, about $25,400; for associate professors, about $18,700; for assistant professors, about $15,300; and for instructors, about $12,100.

Economists who have a Ph. D. generally are paid higher salaries than those who have lesser degrees and similar experience. A substantial number of economists supplement their salaries by consulting, teaching, and research activities. In general, salaries of experienced economists are much higher than the average for all nonsupervisory workers in private industry, except farming.

The Civil Service Commission recognizes education and experience in certifying applicants for entry level positions in the Federal Government. In general, the entrance salary for economists having a bachelor's degree was $9,303 a year in 1977; however, those with superior academic records could begin at $11,523. Those having a master's degree could qualify for positions at an annual salary of $14,097, while those with a Ph. D. could begin at $17,056. Economists in the Federal Government averaged around $25,100 in 1977. Economists work in many government agencies, primarily in the Departments of State, Treasury, Army, Interior, Agriculture, Commerce, Labor, Health, Education, and Welfare, Housing and Urban Development, and Transportation.

Sources of Additional Information

For information on job openings for economists with graduate degrees and on schools offering graduate training in economics, contact:

American Economic Association, 1313 21st Avenue South, Nashville, Tenn. 37212.

For additional information on careers in business economics, contact:

National Association of Business Economists, 28349 Chagrin Blvd., Suite 201, Cleveland, Ohio 44122.

GEOGRAPHERS

(D.O.T. 017.281, 029.088, and 059.088)

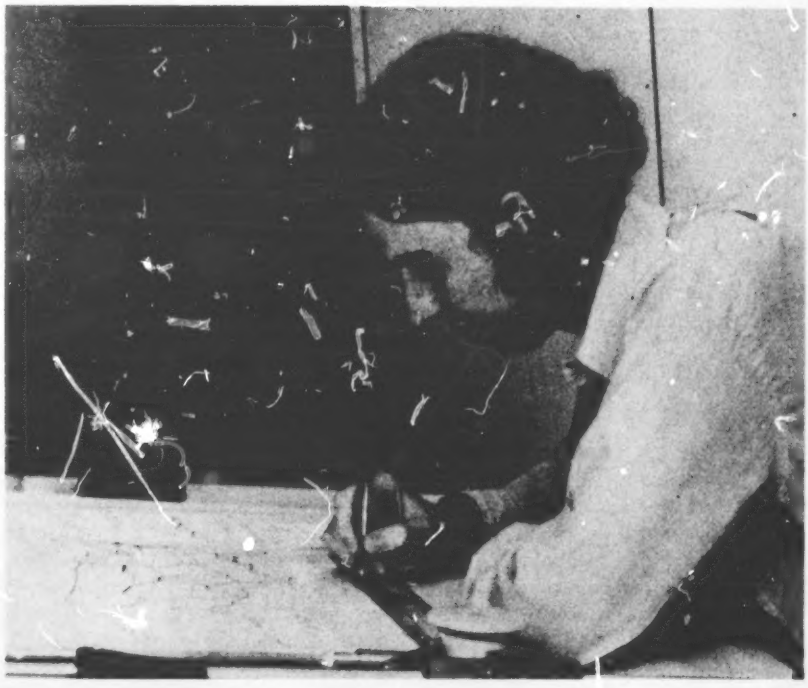
Nature of the Work

Geographers study the spatial characteristics of the earth—and all

that is found on it. Such studies help to explain changing patterns of human settlement—where people live, why they are located there, and how they earn a living.

Geographers are involved in a variety of activities. Most are college or university teachers; others are involved in research, writing, and other nonteaching activities. Their research includes the study and analysis of the distribution of land forms, climate, soils, vegetation, mineral, water, and human resources. They also analyze the distribution and structure of political organizations, transportation systems, marketing systems, urban systems, agriculture, and industry. Many geographers spend considerable time in field study, using surveying and meteorological instruments. They analyze maps, aerial photographs, and data transmitted by remote sensing equipment on satellites, and apply advanced statistical techniques in their work. Some geographers also construct maps, graphs, and diagrams.

Economic geographers deal with the geographic distribution of economic activities—including manufacturing, mining, agriculture, trade, and communications. *Political geographers* study the relationship of geographic conditions to political affairs. *Urban geographers* study cities and their problems and make recommendations about community planning and development, including housing, transportation, and industrial plant sites. (See statement on Urban Planners elsewhere in the *Handoook.*) The physical characteristics and processes affecting the earth are the concerns of *physical geographers.* Typically, they specialize in a particular branch of physical geography such as hydrology—the study of water and its effects, or geomorphology, which is the study of land forms. *Regional geographers* study the physical, economic, political, and cultural characteristics of a particular region or area, which may range in size from a river basin or an island, to a State, a country, or even a continent. *Cartographers* compile and interpret data and design and construct maps and charts. They also conduct research in surveying and mapping techniques and procedures. A growing number of *medical geographers* are concerned with the geographic aspects of human health problems and planning of health services. They study the effect of the natural environment on health, including such factors as climate, vegetation, mineral traces in water, and atmospheric pollution, as well as the geographic distribution of human health problems and health care facilities.



Some geographers specialize in making maps.

Formal training in geography provides the background for a wide range of jobs requiring expertise in environmental resources and planning, research methods, and a variety of other areas. Examples of such jobs are aerial photo interpreter, climatologist, community development specialist, ecologist, intelligence analyst, map analyst, land economist, marketing analyst, regional planner, research analyst, site researcher, and transportation planner. Jobs such as these generally require knowledge not only of geography, but of other disciplines as well. Particularly useful combinations include geography and economics, political science, sociology, anthropology, or urban planning.

Places of Employment

About 10,000 persons worked as geographers in 1976, excluding those teaching in secondary schools.

Colleges and universities employ about three-fifths of all geographers. However, the Federal Government is an important employer of geographers, and many work in the Washington, D.C. area. For these geographers, employed mostly by mapping and intelligence agencies, skills in cartography, aerial photograph interpretation, and remote sensing are important.

The principal Federal employers are the Departments of Defense, Interior, Commerce, and Agriculture. Other agencies include the Departments of State; Transportation; and Health, Education, and Welfare; and the Environmental Protection Agency (EPA), National Aeronautical and Space Administration (NASA), Energy Research and Development Agency (ERDA), and Central Intelligence Agency (CIA).

State and local governments employ a growing number of geographers, mostly on city and State planning and development commissions.

Private industry employs a small but growing number of geographers involved in research, planning, and location analysis. Most work for textbook and map publishers, travel agencies, manufacturing firms, real estate development corporations, insurance companies, communications and transportation firms, or chain stores. Others work for scientific foundations and research organizations, or run their own research or consulting business.

Training, Other Qualifications, and Advancement

The minimum educational requirement for beginning positions in geography in government, industry, or secondary schools usually is a bachelor's degree with a major in the field. Bachelor's degree holders would find it helpful to have training in a specialty such as cartography, aerial photograph or remote sensing data interpretation, statistical analysis, or environmental analysis.

A master's degree usually is the minimum requirement for the position of college instructor, and is important for advancement in business and government. In many colleges and universities, however, a Ph. D. degree usually is required for a professorship and often is necessary to gain tenure. The Ph. D. degree often is necessary for senior level planning, research, and administrative positions in government, industry, research organizations, and consulting firms.

In the Federal Government, geographers generally must have a minimum of 24 semester hours in geography or related fields. Requirements may vary for certain specialties such as cartography.

About 400 colleges and universities offered programs in geography in 1976. Undergraduate study provides a general introduction to the field of geography and often includes field study. Research methods and writing skills also are taught. Typical courses offered are physical geography, cultural geography, climatology and meteorology, economic geography, political geography, urban geography, and quantitative methods in geography. Courses in cartography, remote sensing, historical geography, ecology, natural resource planning, social geography, geography of transportation, geographic aspects of pollution, and geography of various regions also are offered. Geography majors should take appropriate electives in other departments. For example, courses in economics, architecture, urban planning, and urban and rural sociology are important for planners; courses in drawing, design, computer science, and mathematics are important for cartographers; and courses in physics, botany, and geology are important for physical geographers.

In 1976, about 150 institutions offered master's degree programs; 55 offered Ph. D. programs. Applicants are required to have a bachelor's degree in any of the social or physical sciences with a substantial background in geography. Requirements for advanced degrees include field and laboratory work as well as advanced classroom study in geography and preparation of a thesis. Many graduate schools also require course work in advanced mathematics, statistics, and computer science because of the increasing emphasis on these areas in the field. A language may be required for those students who plan to enter the field of foreign regional geography.

Students should select graduate schools that offer appropriate areas of specialization and good research opportunities in nearby libraries, archives, laboratories, and field stations. Employment often is available at area government agencies or research, scientific, or industrial firms.

Persons who want to become geographers should enjoy reading, studying, and research because they must keep abreast of developments in the field. Geographers must work with abstract ideas and theories as well as do practical studies. They also must be able to work independently and communicate their ideas orally and in writing.

Employment Outlook

Employment of geographers is expected to grow faster than the average for all occupations through the mid-1980's. However, most openings are likely to result from deaths, retirements, and other separations from the labor force.

Little growth is anticipated in college and university teaching, the traditional employer of many highly qualified geographers; as a result, many such geographers may seek nonacademic positions. Many opportunities are becoming available in the fields of health services planning and environmental management and planning, including such areas as land and water resources planning and flood management. Significant growth in the number of jobs requiring knowledge of remote sensing, cartography, and climatology also is expected. The Federal Government will need additional personnel to work in programs such as health planning, regional development, environmental quality, and intelligence. Employment of geographers in State and local government is expected to expand, particularly in areas such as health planning, conservation, environmental quality, highway planning, and city, community, and regional planning and development. Private industry is expected to hire increasing numbers of geographers for market research and location analysis.

The employment outlook for geographers with the Ph. D. is expected to be favorable through the mid-1980's for research and administrative positions in government, industry, research organizations, and consulting firms. Ph. D. 's may face competition for academic positions, although those graduating from high-ranking universities should have an advantage. Those with the master's degree are likely to face competition for academic positions, but should have good opportunites for planning and marketing positions in government and industry.

Graduates with a bachelor's degree in geography are expected to face competition for jobs as geographers. Some may find jobs as cartographers, climatologists, or intelligence analysts, while many of these degree holders may find employment in government and industry as management trainees, research assistants, or administrative assistants. Others may obtain employment as research or teaching assistants in educational institutions while studying for ad-

vanced degrees. Some bachelor's degree holders teach at the high school level, although in some States the master's degree is becoming essential for high school teaching positions. Others earn library science degrees and become map librarians.

Earnings and Working Conditions

According to the 1975-76 College Placement Council Salary Survey, bachelor's degree candidates in the social sciences received offers averaging around $10,000 a year; master's degree candidates in the social sciences, around $12,000.

According to an Association of American Geographers survey, Ph. D.'s with no teaching experience earned starting salaries between $12,000 and $14,000 for the academic year 1975-76, while the average salary of geographers employed in colleges and universities was $19,000. Salaries of geographers in planning positions in business and industry are comparable to those in the Federal Government.

Geographers in educational institutions usually have an opportunity to earn income from other sources, such as consulting work, special research, and publication of books and articles. In general, salaries of experienced geographers are higher than the average for all nonsupervisory workers in private industry, except farming.

The Civil Service Commission recognizes education and experience in certifying applicants for entry level positions in the Federal Government. In general, geographers in the Federal Government with the bachelor's degree and no experience started at $9,303 or $11,523 a year in 1977, depending on their college achievement. Those with a master's degree started at $14,097 a year, and those with the Ph. D. at $17,056. Geographers and cartographers in the Federal Government averaged around $21,100 in 1977.

Geographers sometimes must do field work in primitive regions of the world, requiring an ability to adapt to different social and cultural environments.

Sources of Additional Information

For additional information on careers and job openings for geographers, and on schools offering various programs in geography, contact:

Association of American Geographers, 1710 16th St. NW., Washington, D.C. 20009.

HISTORIANS

(D.O.T. 052.038 and .088)

Nature of the Work

History is the record of past events, institutions, ideas, and people. Historians describe and analyze the past through writing, teaching, and research. They relate their knowledge of the past to current events in an effort to explain the present.

Historians may specialize in the history of a specific country or area, or era—ancient, medieval, or modern. They also may specialize in the history of a field, such as economics, medicine and disease, philosophy, religion, science, culture, military affairs, the labor movement, art, or architecture. Other specialties are concerned with historic preservation, women, business, archives, quantitative analysis, and the relationship between technological and other aspects of historical development.

Colleges and universities employ about 70 percent of all historians.

In this country, many historians specialize in the social or political history of either the United States or modern Europe; however, a growing number are specializing in African, Latin American, Asian, or Near Eastern history. Some historians specialize in phases of a larger historical field, such as the American Civil War.

Most historians work in colleges and universities and are primarily concerned with teaching. They often lecture, write, and do research outside the academic setting. Other historians employed in colleges and universities are involved in research and development, administration, and other non-teaching activities. Some specialists, called *archivists*, work for museums, special libraries, historical societies, and other organizations. They collect historical documents and objects, prepare historical exhibits, and edit and classify historical materials for use in research and other activities. A growing number of historians are concerned with the interpretation and preservation of historic buildings, treasures, documents, and other items. A few serve as consultants to editors, publishers, and producers of materials for radio, television, and motion pictures. Some historians are administrators in government or researchers who prepare studies, articles, and books on their findings.

Places of Employment

An estimated 22,500 persons worked as professional historians in 1976, excluding those teaching in secondary schools. Colleges and universities employ about seventy percent of all historians. Historians also work in archives, libraries, museums, research organizations, historical societies, publishing firms, large corporations, and government agencies. Historians employed in the Federal Government work principally in the National Archives, Smithsonian Institution, or in the Departments of Defense, Interior, and State. Other Federal agencies that employ historians include the National Aeronautics and Space Administration, Central Intelligence Agency, National Security Agency, and the Departments of

Agriculture, Commerce, Transportation, and Health, Education and Welfare. A small but growing number work for State and local governments.

Historians are employed in virtually all U.S. institutions of higher education. Most historians who work for the Federal Government are in Washington, D.C. Historians in other types of employment usually work in localities having museums or libraries with collections adequate for historical research.

Training, Other Qualifications, and Advancement

Graduate education usually is necessary for employment as a historian. A master's degree in history is the minimum requirement for the position of college instructor. A Ph. D. degree usually is required for a professorship and for administrative positions, and almost always is necessary to gain tenure.

While historians in the Federal Government generally must have 24 semester hours in history, requirements may vary for certain specialists such as archivists, who usually must have 30 hours of graduate work in history. Most historians in the Federal Government and in nonprofit organizations have Ph. D. degrees, or their equivalent in training and experience.

Although a bachelor's degree with a major in history is sufficient training for some beginning jobs in government— either Federal, State, or local— advancement opportunities may be limited for persons without at least a master's and preferably a Ph. D. degree in history. Since beginning jobs are likely to be concerned with collection and preservation of historical data, a knowledge of archival work is helpful.

Training for historians is available in many colleges and universities. Over 1,250 schools offer programs for the bachelor's degree; about 440, the master's; and about 145, doctorates.

History curriculums in the Nation's colleges and universities are varied; however, each basically provides training in research methods, writing, and speaking. These are the basic skills essential for historians in all positions. Quantitative methods of analysis, including statistical and computer techniques, are increasingly important for historians; many college programs include them. Most doctoral candidates must exhibit competence in a foreign language.

Historians spend a great deal of time studying, doing research, writing papers and reports, and giving lectures and presentations. Therefore, they must possess analytical skills and the ability to communicate their ideas effectively, orally and in writing. The ability to work both independently and as part of a group also is essential.

Employment Outlook

Employment of historians is expected to grow more slowly than the average for all occupations through the mid-1980's. Job openings will result chiefly from deaths, retirements, and other separations from the labor force.

Only a small number of historians will be needed to fill positions in colleges and universities, junior colleges, libraries, archives, museums, secondary schools, research organizations, publishing firms, and government agencies. Persons with training in historical specialties such as historic preservation and business history, in addition to those well-trained in quantitative methods in historical research are expected to have the most favorable job opportunities. Those who are able to teach several areas of history should have the best opportunities for jobs in colleges and universities.

Although information is limited on patterns of entry to the field, it is clear that the number of persons seeking to enter the occupation will greatly exceed available positions. As a result, historians with a Ph. D. are expected to face keen competition for positions through the mid-1980's. Those graduating from prestigious universities should have some advantage in this highly competitive situation. Since academic institutions are the traditional employers of many highly qualified historians and competition for these jobs is expected to be particularly keen, many Ph. D.'s are expected to accept part-time, temporary assignments as instructors with little or no hope of gaining tenure. Persons with the master's degree in history will encounter very keen competition for jobs as historians. However, some of them will find teaching positions in community and junior colleges or high schools; such jobs may have State certification requirements.

People with a bachelor's degree in history are likely to find very limited opportunities for employment as professional historians. However, an undergraduate major in history provides an excellent background for some jobs in international relations, journalism, and other areas, and for continuing education in law, business adminstration, and related disciplines. Many graduates will find jobs in secondary schools or in government, business, and industry as management or sales trainees, or as research or administrative assistants.

Earnings

According to the 1975-76 College Placement Council Survey, bachelor's degree candidates in the social sciences received offers averaging around $10,000 a year; master's degree candidates in the social sciences, around $12,000.

According to information from the American Historical Association, large public colleges and universities offered starting salaries ranging from about $13-$15,000 for academic year 1975-76. Smaller public and private academic institutions generally offered lower salaries. Full professors and top administrators may earn $25-$30,000 a year or more. In general, salaries of experienced historians are higher than the average for all nonsupervisory workers in private industry, except farming.

The Civil Service Commission recognizes education and experience in certifying applicants for entry level positions in the Federal Government. In general, historians having a bachelor's degree could start at $9,303 or $11,523 a year in 1977, depending upon the applicant's academic record. Starting salaries for those having a master's degree were $14,097 a year, and for those having a Ph. D.,

$17,056. Historians and archivists in the Federal Government averaged around $22,400 a year in 1977.

Many historians, particularly those in college teaching, supplement their income by teaching summer classes, writing books or articles, or giving lectures.

Sources of Additional Information

Additional information on careers and job openings for historians, and on schools offering various programs in history, is available from:

American Historical Association, 400 A St. SE., Washington, D.C. 20003.

For information on careers and schools offering programs in historic preservation, contact:

National Trust for Historic Preservation, 740 Jackson Place, N.W., Washington, D.C. 20006.

Additional information on nonteaching opportunities for historians is available from:

Organization of American Historians, Indiana University, 112 North Bryan St., Bloomington, Ind. 47401.

POLITICAL SCIENTISTS

(D.O.T. 051.088)

Nature of the Work

Political scientists study the functions and workings of governments. Many of them specialize in a general area of political science including political theory, U.S. political institutions and processes, comparative political institutions and processes, or international relations and organizations. Some specialize in a particular type of political institution or in the politics of a specific era.

Most political scientists teach in colleges and universities where they may combine research, consultation, or administrative duties with teaching. Some are primarily researchers who survey public opinion on political questions for private research organizations, or study proposed legislation for Federal, State, and municipal governments, legislative reference bureaus, or congressional staffs and committees. Others analyze the operations of government agencies, specialize in foreign affairs, or do administrative or research work for either government or nongovernment organizations. Some political scientists serve as consultants to political groups or business firms.

Places of Employment

About 14,000 persons worked as political scientists in 1976, excluding those teaching in secondary schools. About four-fifths work in colleges and universities. Most of the remainder work in government, management consulting firms, political or-

Some political scientists survey public opinion on political questions for private research organizations.

ganizations, research organizations, civic and taxpayers associations, and large business firms.

Political scientists can be found in nearly every college or university town since courses in government and political science are taught in almost all institutions of higher education. Since the national headquarters of many associations, unions, and other organizations are located in Washington, D.C., this area attracts a sizable number of political scientists in research or policy jobs. The Federal Government employs political scientists both domestically and abroad. Those on overseas assignment work primarily for agencies of the U.S. Department of State, such as the Foreign Service, and the U.S. Agency for International Development. Other employing agencies include the U.S. Information Agency, Energy Research and Development Agency, Central Intelligence Agency, and the Departments of Defense Treasury, Justice, and Commerce. Political scientists in the Federal Government primarily are concerned with foreign affairs, international relations, and intelligence. Those employed in State and local government often are concerned with the administration of housing, economic development, transportation, environmental protection, and health programs. Political scientists in the business world may deal with marketing, personnel, advertising, public relations, banking, finance, and consumer affairs.

Training, Other Qualifications, and Advancement

Graduate training generally is required for employment as a political scientist. Completion of all the requirements for the Ph. D. degree is becoming the prerequisite for appointment to academic positions, and almost always is required for one to gain a professorship and tenure. The Ph. D. also is helpful for advancement in government, industry, and other nonacademic areas.

College graduates with a master's degree can qualify for various administrative and research positions in government, industry, and nonprofit research or civic organizations. A master's degree in international relations, foreign service, or area study (for example, Soviet Government) is helpful in obtaining positions in Federal Government agencies concerned with foreign affairs. Intelligence, foreign affairs, and international relations specialists in the Federal Government generally must have 24 semester hours in political science, history, economics, or related fields.

People with a bachelor's degree in political science may qualify as trainees in such areas as management, research, administration, sales, and law enforcement. Many students with bachelor's degrees in political science go on to study law, journalism, or some specialized or related branch of political science, such as public administration and international relations.

In 1976, about 1,100 colleges and universities offered a bachelor's degree in political science, around 270 had master's programs, and about 115 had doctoral programs. Many colleges and universities offer field training and internships that provide experience in government work or teaching.

Undergraduate programs in political science include courses in the principles of government and politics, State and local government, comparative studies, political theory, foreign policy, public administration and policy, political behavior, constitutional, administrative, and international law, and many other offerings. Other specialized political science courses and seminars deal with the problems of detente, politics of growth and technology, politics of health, legal status of women, political warfare in the age of nuclear destruction, and political culture and the psychological processes of death. A growing number of programs at both the undergraduate and graduate levels offer courses in quantitative and statistical methods, including the use of computers.

Graduate students may specialize in American politics, comparative politics, international politics, political behavior, political theory, public administration, urban affairs, public policy, and other areas. Doctoral candidates often must exhibit competence in one or more foreign languages and quantitative research techniques.

Persons planning careers as political scientists should like to work with details. They must be objective and able to work independently or as part of a team. Ability to express themselves clearly, orally and in writing, is important to political scientists.

Employment Outlook

Employment of political scientists is expected to increase more slowly than the average for all occupations through the mid-1980's. Most job openings will result from deaths, retirements, and other separations from the labor force. The largest area of employment will continue to be in college and university teaching.

The number of persons who graduate with advanced degrees in political science will greatly exceed available job openings through 1985. As a result, those with a Ph. D. face stiff competition for positions through the mid-1980's, although Ph. D.'s from prestigious universities are likely to have an advantage. Many Ph. D.'s are expected to accept part-time, temporary assignments as instructors with little or no hope of gaining tenure. Graduates trained in quantitative methods of research, American Government, public administration, or policy science should have an advantage for both academic and nonteaching positions. Those with knowledge of economic theory, transportation, health care delivery systems, and environmental questions may be in particular demand. Graduates seeking to enter the foreign service are expected to face very stiff competition. Master's degree holders will face very keen competition finding academic positions, but those with specialized training in areas such as policy science or public administration may find jobs in Federal, State and local government, research bureaus, political organizations, and business firms.

New graduates with the bachelor's degree are expected to find few opportunities for jobs as professional political scientists. However, many of these graduates are expected to accept positions as trainees in government, business, and industry. For

those planning to continue their studies in law, foreign affairs, journalism, and related fields, political science provides an excellent background. Some new graduates who meet State certification requirements will be able to enter high school teaching.

Earnings

According to the 1975-76 College Placement Council Salary Survey, bachelor's degree candidates in the social sciences received offers averaging around $10,000 a year; master's degree candidates in the social sciences, around $12,000.

According to an American Political Science Association Survey, the median beginning salaries for new faculty members during 1975-76 were $12,300 for Ph. D.s and $11,200 for those without a Ph. D. The median annual salaries of political scientists employed in educational institutions in 1975-76 were: $22,000 for full professors; $17,000 for associate professors; $13,500 for assistant professors; and $11,500 for lecturers and instructors. In general, salaries of experienced political scientists are higher than the average for all nonsupervisory workers in private industry, except farming.

The Civil Service Commission recognizes education and experience in certifying applicants for entry level positions in the Federal Government. In general, the entrance salary for those with a bachelor's degree was $9,303 or $11,523 a year in 1977, depending upon the applicant's academic record. Starting salaries for those with a master's degree were $14,097 a year, and for those with a Ph. D., $17,056. Intelligence, foreign affairs, and international relations specialists in the Federal Government averaged around $25,300 in 1977.

Some political scientists, particularly those in college teaching, supplement their income by teaching summer courses or consulting.

Sources of Additional Information

Additional information on careers, job openings, and schools offering various graduate programs in political science and related fields is available from:

American Political Science Association, 1527 New Hampshire Ave. NW., Washington, D.C. 20036.

PSYCHOLOGISTS

(D.O.T. 045.088 and .108)

Nature of the Work

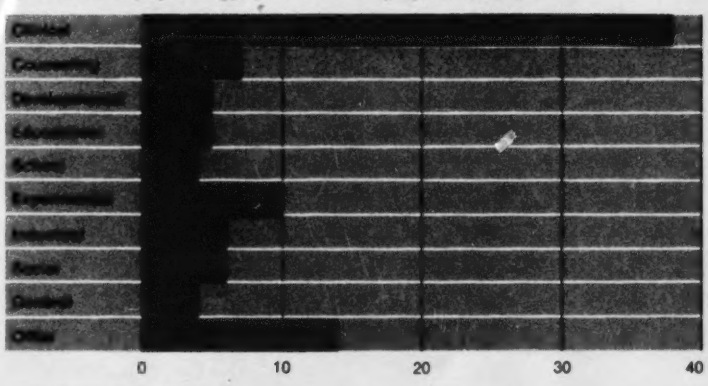
Psychologists study the behavior of individuals and groups in order to understand and explain their actions. During their work, they may be concerned with the effect of one member's emotional stress upon a family, causes of low morale at work, or the most effective way of dealing with terrorists. Some engage in teaching, research, and administrative activities in colleges and universities; others provide counseling services, plan and conduct training programs for employees, conduct research, advise on psychological methods and theories, or administer psychology programs in hospitals, clinics, or research laboratories. Many psychologists combine several of these activities.

Psychologists gather information about the capacities, interests, and behavior of people in various ways. They interview individuals, develop and administer tests and rating scales, study personal histories, and conduct controlled experiments. Also, psychologists often design and conduct surveys.

Psychologists specialize in a wide variety of areas. *Experimental psychologists* study behavior processes and work with human beings and lower animals such as rats, monkeys, and pigeons; prominent areas of experimental research include motivation, learning and retention, sensory and perceptual processes, and genetic and neurological factors in behavior. *Developmental psychologists* study the patterns and causes of behavioral change as people progress through life; some concern themselves with the origins of human behavior during childhood, while others study changes that take place during maturity and old age. *Personality psychologists* study human nature, individual differences, and the ways in which those differences develop. *Social psychologists* examine people's interactions with others and with the social environment; prominent areas of study include group behavior, leadership, and dependency relationships. Psychologists in *evaluation research* study social programs and their effects and recommend improvements as a result of increased understanding. *Environmental psy-*

Among doctoral psychologists, clinical specialists make up the largest group

Specialties in psychology, percent of employment, 1975



Source: National Research Council

chologists study the influences of environments on people, and their perceptions of these environments. *Population psychologists* study demography's relation to personal and social behavior. *Comparative psychologists* compare the behavior of different animals, including man. *Physiological psychologists* study the relationship of behavior to the biological functions of the body. Psychologists in the field of *psychometrics* develop and apply procedures for measuring psychological variables.

Psychologists often combine several areas in their specialty. *Clinical psychologists*, the largest specialty, generally work in mental hospitals or clinics, or maintain their own practices. They may help the mentally or emotionally disturbed readjust to life with altered physical capabilities. They interview patients, give diagnostic tests, provide individual, family, and group psychotherapy, and design and carry through behavior modification programs. *Counseling psychologists* use several techniques, including interviewing and testing, to help people with problems of everyday living—personal, social, educational, or vocational. *Educational psychologists* study psychological processes as related to applied problems in education. *School psychologists* diagnose educational problems, facilitate school adjustment, and help solve learning and social problems in the schools. *Industrial and organizational psychologists* engage in personnel research, policy, and planning, training and development, psychological test research, counseling, and organizational development and analysis, among other activities. *Engineering psychologists* develop and improve human-machine systems, military equipment, and industrial products. *Community psychologists* apply psychological knowledge to problems of community life. *Consumer psychologists* study the psychological factors that determine an individual's behavior as a consumer of goods and services.

Places of Employment

About 90,000 people, excluding secondary school teachers, worked as psychologists in 1976. About one-half worked in educational institutions, primarily colleges and universities (including medical schools), either as teachers, researchers, administrators, or counselors.

The second largest group of psychologists work in hospitals, clinics, rehabilitation centers, and other health facilities, while many others work for Federal, State, or local government agencies. They typically administer and interpret intelligence, interest, and aptitude tests; diagnose and treat mental disorders; and conduct educational, vocational, and personal adjustment counseling. Federal agencies that employ the most psychologists are the Veterans Administration, the Department of Defense, and the Public Health Service. Other employing agencies include the Departments of Justice, Commerce, Treasury, Interior, Labor, and Transportation, the Civil Service Commission, the National Aeronautical and Space Administration, and the Environmental Protection Agency.

Psychologists also are employed in correctional institutions, research organizations, and business firms. Some are in independent practice or work as consultants.

Training, Other Qualifications, and Advancement

A doctoral degree almost always is the minimum requirement for employment as a psychologist. The degree is needed for many entrance positions and is becoming increasingly important for advancement. People with doctorates in psychology qualify for the more responsible research, clinical, and counseling positions, as well as for teaching positions in colleges and universities and administrative posts in Federal and State programs. The doctoral degree is necessary to gain academic tenure, a process that is becoming more difficult and taking longer than in the past.

People with a master's degree in psychology can qualify as psychological assistants, administering and interpreting some kinds of psychological tests. Working under the supervision of psychologists, they may collect and analyze data, conduct experiments, or perform administrative duties. They also qualify for certain counseling jobs or—if they have previous teaching experience—may be hired as school psychologists or counselors. (See the statements on school counselors and rehabilitation counselors.)

People with a bachelor's degree in psychology may work directly under psychologists and other professionals in community mental health centers, vocational rehabilitation offices, and correctional programs; as research or administrative assistants; as trainees in government or business; or—provided they meet State certification requirements—as high school teachers.

In the Federal Government, some positions are filled at the entrance grade with candidates having at least 24 semester hours in psychology and one course in statistics. Most positions, however, are filled at a higher grade. Clinical psychologists generally must have completed the Ph. D. requirements and have served an internship; counseling psychologists need 2 years of graduate study in counseling and 1 year of counseling experience.

At least 1 year of full-time graduate study is needed to earn a master's degree in psychology. An additional 3 to 5 years of graduate work usually are required for a Ph. D. In clinical or counseling psychology, the requirements for the Ph. D. degree generally include an additional year or more of internship or supervised experience. Doctoral candidates at some universities must exhibit competence in a foreign language. Some gain postdoctoral appointments for special study and research.

The Ph. D. degree culminates in a dissertation based on original research which contributes to psychological knowledge. Another professional degree, the Psy. D. (Doctor of Psychology), is based on practical work and examinations rather than a dissertation.

Some universities require graduate school applicants in psychology to have a major in that field. Others prefer only basic psychology with courses in the biological, physical, and social sciences, statistics, and

mathematics. Some persons trained in other fields such as social work, counseling, and education find graduate education in psychology useful.

Competition for admission into graduate psychology programs is keen. Only the most highly qualified applicants can expect to be admitted to graduate study.

Over 1,100 colleges and universities offer a bachelor's degree program in psychology; about 325, a master's; about 165, a Ph. D.; and about 20, a Psy. D. The American Psychological Association (APA) presently accredits doctoral training programs in clinical, counseling, and school psychology. In 1976, over 100 colleges and universities offered fully approved programs in clinical psychology; over 20, in counseling psychology; and fewer than 10, in school psychology. APA also has approved about 120 facilities offering internships for doctoral training in clinical and counseling psychology.

Although financial aid is becoming increasingly difficult to obtain, some graduate students may receive fellowships, scholarships, or part-time employment. The Veterans Administration offers a number of predoctoral traineeships to students while they work as interns in VA hospitals, clinics, and related training agencies. The National Science Foundation, Department of Health, Education, and Welfare, various branches of the Armed Forces, and many other organizations and foundations also provide fellowships, grants, and loans. However, the present trend at the Federal level is to provide low-interest loans rather than fellowships and grants.

Psychologists who want to enter independent practice must meet certification or licensing requirements. In 1976, 49 States and the District of Columbia had these requirements. Licensing laws vary by State, but generally require a doctorate in psychology, 2 years of professional experience, and an examination.

The American Board of Professional Psychology awards diplomas in clinical, counseling, industrial and organizational, and school psychology. Candidates generally need a doctorate in psychology, 5 years of qualifying experience, and professional endorsements, and also must pass an examination.

Sensitivity, patience, and a genuine interest in others are particularly important for work in clinical and counseling psychology.

People pursuing a career in psychology must be emotionally stable, mature, and able to deal effectively with people. Sensitivity, patience, and a genuine interest in others are particularly important for work in clincal and counseling psychology. Research psychologists should be able to do detailed and independent work; verbal and writing skills are necessary to communicate research findings.

Employment Outlook

Employment of psychologists is expected to grow faster than the average for all occupations through the mid-1980's. In addition to employment growth, some openings will result from deaths, retirements, and other separations from the labor force.

Several factors should help maintain a strong demand for psychologists. First is increased public concern for the development of human resources, particularly among the aging and minority groups. Growing awareness of the need for testing and counseling children also should increase the demand. Federal legislation emphasizing good health rather than treatment of illness may produce new roles for psychologists in preventive and therapeutic situations and in group practice. Inclusion of psychological services in a future national health insurance program also may heighten demand.

Other openings are likely to occur as psychologists move into new fields such as technology assessment—the study of the effects of technological advances in areas such as agriculture, energy, the environment, and the conservation and use of natural resources. In addition, psychologists are becoming involved in program evaluation in such fields as education, military service, and law enforcement. Government agencies, business, and industry also are making increased use of the services that

psychologists can provide in counseling, employee assessment and training, and market research.

A doctorate is increasingly necessary for those wishing to enter the field. However, the growing number of doctoral degrees awarded in psychology each year means that new Ph. D.'s will face increasing competition for jobs through 1985, particularly academic positions in large colleges and universities. Those willing to work in smaller and newer institutions should have better employment prospects.

Persons holding doctoral degrees from prestigious universities should have an advantage on the job market. Those with doctorates in applied areas such as clincial, counseling, and industrial or organizational psychology are expected to have more favorable job prospects than those trained in traditional academic specialties such as experimental, physiological, and comparative psychology.

As more and more people earn doctorates in psychology, master's degree holders will face increasingly keen competition, particularly for research or teaching jobs in colleges and universities. Opportunities are likely to be best in industry, government, and human service organizations, all of which will have some jobs for persons with training in applied areas including evaluation research.

Bachelor's degree holders will be able to enter the field only as assistants or trainees, working under the direct supervision of psychologists and other professionals. However, for persons who wish to continue their education in fields such as law, medicine, social work, sociology, counseling, recreation, gerontology, or related disciplines, psychology provides an excellent undergraduate background.

Earnings and Working Conditions

In 1975, the median starting salary for psychologists holding a master's degree was about $11,000 a year, according to the American Psychological Association. The median beginning salary for those holding a doctorate was about $13,000 for 9-month academic jobs and between $16,000 and $17,000 for 12-month jobs.

According to a 1975 survey by the National Research Council, the median annual salary for all doctoral psychologists was about $22,000. In educational institutions, the median was about $20,900; in the Federal Government, about $26,600; in State and local government, about $21,500; in hospitals and clincs, about $21,400; in nonprofit organizations, about $24,600; and in business and industry, about $30,600. Ph. D. psychologists in private practice and in applied specialties generally have higher earnings than other psychologists. In general, salaries of experienced psychologists are much higher than the average for all nonsupervisory workers in private industry, except farming.

The Civil Service Commission recognizes education and experience in certifying applicants for entry level positions in the Federal Government. In general, the entrance salary for psychologists having a bachelor's degree was $9,303 or $11,523 a year in 1977; counseling psychologists with a master's degree and 1 year of counseling experience started at $14,097; clinical psychologists having a Ph. D. degree and 1 year of internship started at $17,056. The average salary for psychologists in the Federal Government was about $25,200 a year in 1977.

Psychologists in colleges and universities receive the same benefits as other faculty members—sabbatical leaves of absence, life and health insurance, and retirement benefits. Working hours are generally flexible, but often entail evening work with individual students or groups. Clinical and counseling psychologists often work in the evenings since their patients sometimes are unable to leave their jobs or school during the day.

Sources of Additional Information

For information on career opportunities and job openings for psychologists, admission and degree requirements in colleges and universities offering graduate programs in psychology, accreditation, certification or licensure requirements, and financial assistance for graduate students in psychology, contact:

American Psychological Association, Educational Affairs Office, 1200 17th St. NW., Washington, D.C. 20036.

Information on traineeships and fellowships is available from colleges and universities that have graduate psychology departments.

SOCIOLOGISTS

(D.O.T. 054.088)

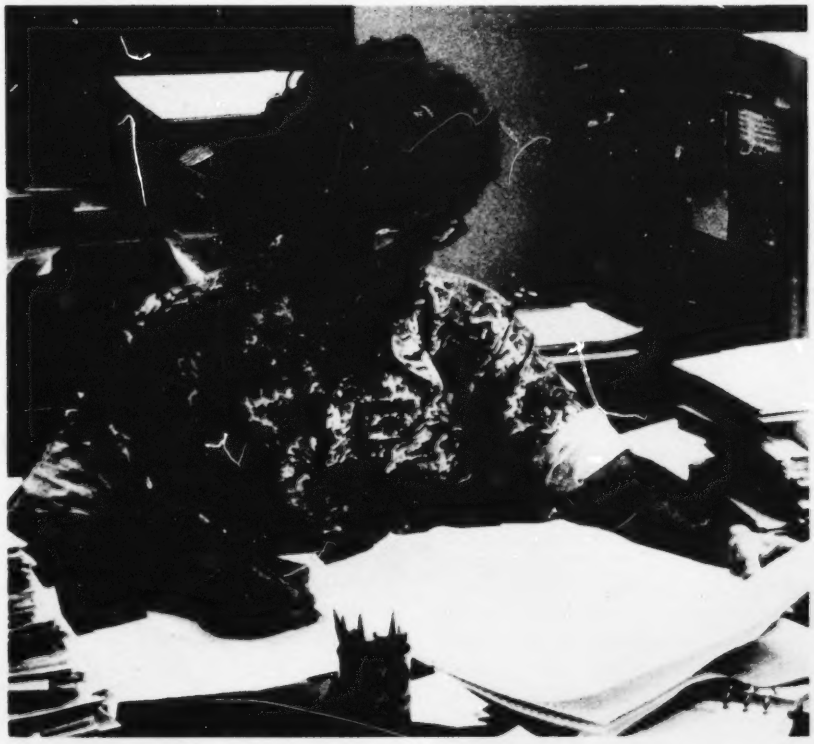
Nature of the Work

Sociologists study human society and social behavior by examining the groups that humans form. These groups include families, tribes, communities, and governments, along with a variety of social, religious, political, business, and other organizations. Sociologists study the behavior and interaction of groups; trace their origin and growth; and analyze the influence of group activities on individual members.

Some sociologists concern themselves primarily with the characteristics of social groups and institutions. Others are more interested in the ways individuals are affected by groups to which they belong.

Important fields of specialization for sociologists include social organization, social pathology and psychology, rural or urban sociology, criminology and penology, demography, industrial sociology, and medical sociology—the study of social factors that affect mental and public health. Increasingly, sociologists are finding opportunities to apply their professional knowledge and methods in areas of practice as diverse as intergroup relations, family counseling, public opinion analysis, law, education, public relations, regional and community planning, and environmental planning.

Most sociologists are college and university teachers; some are involved in research, writing, administration, and other nonteaching activities. Sociological research, like other



Sociologists spend a great deal of their time in study and research.

kinds of social science research, involves collecting information, preparing case studies, testing, and conducting surveys and laboratory experiments. Increasingly, sociologists apply advanced statistical and computer techniques in their research. The results of sociological research often aid educators, lawmakers, administrators, and other officials interested in local, national, or international social problems. Sociologists work closely with members of other professions including psychologists, physicians, economists, political scientists, anthropologists, and social workers.

Some sociologists supervise the operation of social service agencies such as family and marriage clinics. Others, acting as consultants, advise on diverse problems such as the management of hospitals for the mentally ill, the rehabilitation of juvenile delinquents, or the development of effective advertising programs to promote public interest in particular products such as television sets or cars.

Places of Employment

About 19,000 persons worked as sociologists in 1976, excluding those teaching in secondary schools.

Colleges and universities employ about four-fifths of all sociologists. A number work for Federal, State, local, or international government agencies, and are professionally concerned with such subjects as poverty, welfare services and other public assistance programs, population problems, social rehabilitation, community development, and environmental impact studies. Some work in private industry, research firms, management consulting firms, welfare or other nonprofit organizations, or else are self-employed. Some work in positions that require training in sociology and related disciplines, but are not classified as professional sociologists. Related fields include social work, recreation, and public health.

Since sociology is taught in most institutions of higher learning, sociologists may be found in nearly all college communities. They are most heavily concentrated, however, in large colleges and universities that offer graduate training in sociology and opportunities for research.

Training, Other Qualifications, and Advancement

A master's degree and a major in sociology usually is the minimum requirement for employment as a sociologist. The Ph. D. degree is essential for appointment as a professor and for tenure in almost all colleges or universities. The Ph. D. commonly is required for directors of major research projects, important administrative positions, or consultants.

Sociologists with master's degrees can qualify for many administrative and research positions, provided they have sufficient training in research, statistical, and computer methods. Advancement from these to supervisory positions in both public and private agencies generally is based on experience. Sociologists with master's degrees may qualify for some college instructorships. Most colleges, however, appoint as instructors only people who have training beyond the master's level—frequently the completion of all requirements for the Ph. D. degree except the doctoral dissertation. Outstanding graduate students may get teaching or research assistantships that provide both financial aid and valuable experience.

Bachelor's degree holders in sociology may get jobs as interviewers or as administrative or research assistants. Many work as social workers, counselors, or recreation workers in public and private welfare agencies. Sociology majors who have sufficient training in statistics may get positions as beginning analysts or statisticians.

Over 1,200 colleges and universities offer bachelor's degree programs in sociology; about 145 offer master's degrees; and about 125 have doctoral programs. Sociology departments offer a wide variety of courses including sociological theory, statistics and quantitative methods, dynamics of social interaction, sex roles, population, social stratification, social control, small group analysis, rural-urban relations, formal and complex organizations, sociology of religion, law, the arts, war,

politics, education, occupations and professions, and mental health, in addition to many others.

In the Federal Government, candidates generally must have 24 semester hours in sociology, with course work including theory and methods of social research. However, since positions as professional sociologists are quite limited, advanced study in the field is highly recommended.

The choice of a graduate school is important for people who want to become sociologists. Students should select schools that have adequate research facilities and offer appropriate areas of specialization such as theory, social psychology, or quantitative methods. Opportunities to gain practical research experience also may be available, and sociology departments frequently aid in the placement of graduates.

Sociologists spend a great deal of their time in study and research. They must be able to communicate effectively, both orally and in writing. The ability to work as part of a group as well as independently is important.

Employment Outlook

Employment of sociologists is expected to increase more slowly than the average for all occupations through the mid-1980's. Most openings will result from deaths, retirements, and other separations from the labor force. Some academic openings will result from the growing trend to include sociology courses in the curriculums of other professions, such as medicine, law, business administration and management, and education. Demand in the nonteaching area will center around public and private programs dealing with the development of human resources, particularly those designed to cope with social and welfare problems.

The number of persons who will graduate with advanced degrees in sociology is likely to greatly exceed available job openings. Graduates with a Ph. D. face increasing competition for academic positions, although those with degrees from prestigious institutions may have an advantage in securing a teaching job Some Ph. D.'s may accept temporary, part-time positions as instructors. Others may find research and administrative positions in government, research organizations, and consulting firms. Graduates with training in business administration including management and accounting should have the most favorable job opportunities in business and industry. Persons with a master's degree will continue to face very keen competition for academic positions, although some jobs may be available in junior and community colleges. Some may find research and administrative jobs in government, research firms, and private industry.

Bachelor's degree holders are expected to find very limited opportunities as professional sociologists. However, many graduates are expected to gain positions as trainees in government, business, and industry. For those planning to continue their studies in law, journalism, social work, recreation, counseling, and other related disciplines, sociology provides an excellent background. Some who meet State certification requirements may enter high school teaching.

Sociologists well trained in quantitative research methods, survey methods, advanced statistics, and computer science will have the widest choice of jobs. Demand is expected to be particularly strong for research personnel to work in such areas as urban studies, ethnic studies, race relations, deviant behavior, community development, population analysis, medical sociology, and the sociology of law, work, and education.

Earnings and Working Conditions

According to the 1975-76 College Placement Council Salary Survey, bachelor's degree candidates in the social sciences received offers averaging around $10,000 a year; master's degree candidates in the social sciences, around $12,000.

Salaries of sociologists working in educational institutions and non-academic settings are comparable to those for other social scientists. In general, salaries of experienced sociologists are higher than the average for all nonsupervisory workers in private industry, except farming.

The Civil Service Commission recognizes education and experience in certifying applicants for entry level positions in the Federal Government. In general, the entrance salary for sociologists with a bachelor's degree was $9,303 or $11,523 a year in 1977, depending upon the applicant's academic record. The starting salary for those with a master's degree was $14,097 a year, and for those with a Ph. D., $17,056. Sociologists in the Federal Government work primarily in the Departments of Health, Education, and Welfare; Defense; Agriculture; Interior; Commerce; Transportation; and Housing and Urban Development, as well as the Veterans Administration and Environmental Protection Agency. They averaged around $23,800 in 1977.

In general, sociologists with the Ph. D. degree earn substantially higher salaries than those with master's degrees. Many sociologists, particularly those employed by colleges and universities for the academic year (September to June), supplement their regular salaries with earnings from other sources, such as summer teaching and consulting work.

Sources of Additional Information

Additional information on careers, employment opportunities, and graduate departments of sociology is availabie from:

The American Sociological Association, 1722 N St., NW., Washington, D.C. 20036.

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